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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Application Number	10/712,690
Filing Date	November 13, 2003
First Named Inventor	Chen, et al.
Group Art Unit	1734 1763
Examiner Name	UNKNOWN Zervigon
Attorney Docket Number	AMAT/6766/CPI/L/B/PJS
Submission Date	September 29, 2004

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of 4

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
PT	A57	US-20030113187	06/19/2003	Lei, et al.	414/217
	A58	US-20030108674	06/12/2003	Chung, et al.	427/255.394
	A59	US-20030106490	06/12/2003	Jallepally, et al.	117/89
	A60	US-20030101927	06/05/2003	Raaijmakers, et al.	117/200
	A61	US-20030089308	05/15/2003	Raaijmakers, et al.	117/200
	A62	US-20030082307	05/01/2003	Chung, et al.	427/402
	A63	US-20030082301	05/01/2003	Chen, et al.	427/255.28
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	A65	US-20030072913	04/17/2003	Chou, et al.	428/114
	A66	US-20030059538	03/27/2003	Chung, et al.	427/304
	A67	US-20030057527	03/27/2003	Chung, et al.	257/642
	A68	US-20030057526	03/27/2003	Chung, et al.	257/642
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	A70	US-20030049931	03/13/2003	Disney	438/649
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	A73	US-20020127745	09/12/2002	Lu, et al.	438/14
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		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				
PT	BT	WO 03/23835	03/20/2003	Lee, et al.		

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See kind codes of USPTO Patent Documents at www.uspto.gov or MPEP 601.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Communication for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-789-9199) and select option 2.

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PTO/SB/08a (08-03)

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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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Application Number	10/712,690
Filing Date	November 13, 2003
First Named Inventor	Chen, et al.
Group Art Unit	1794- 1763
Examiner Name	Unknown Zervigon
Attorney Docket Number	AMAT/6766/CPI/LB/PJS
Submission Date	September 29, 2004

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Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
A2	A29	US-20040011504	01/22/2004	Ku, et al.	165/47
	A30	US-20040011404	01/22/2004	Ku, et al.	137/341
	A31	US-20040009307	01/15/2004	Koh, et al.	427/869
A3	A32	US-20039124262	07/03/2003	Chen, et al.	438/684
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	A35	US-20030224107	12/04/2003	Lindfors, et al.	156/345.29
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	A48	US-20030168750	09/11/2003	Basceri, et al.	438/656
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A5	A50	US-20030143747	07/31/2003	Bondestam, et al.	427/255.28
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	A56	US-20030116087	06/26/2003	Nguyen, et al.	

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Sheet 1

of 4

Application Number

10/712,690

Filing Date

November 13, 2003

First Named Inventor

Chen, et al.

Group Art Unit

1734 1763

Examiner Name

Unknown Zervigon

Attorney Docket Number

AMAT/6766/CPI/LB/PJS

Submission Date

September 29, 2004

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		Number-Kind Code ² (if known)			
T/A	A1	US-6778762	08/17/2004	Shareef, et al.	392/416
	A2	US-6660126	12/09/2003	Nguyen, et al.	156/345.34
	A3	US-6632279	10/14/2003	Ritala, et al.	117/101
	A4	US-6630201	10/07/2003	Chiang, et al.	427/255.28
	A5	US-6630030	10/07/2003	Suntola, et al.	118/728
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	A22	US-20040033698	02/19/2004	Lee, et al.	438/761
	A23	US-20040018747	01/29/2004	Lee, et al.	438/643
	A24	US-20040018723	01/29/2004	Byun, et al.	427/250
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	A26	US-20040015300	01/22/2004	Ganguli, et al.	438/692
	A27	US-20040014320	01/22/2004	Chen, et al.	422/129
	A28	US-20040013577	01/22/2004	Ganguli, et al.	

Examiner

Date Considered

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U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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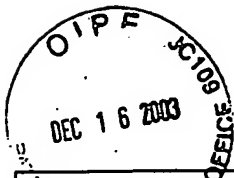
Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Application Number	10/712,690
				Filing Date	November 13, 2003
				First Named Inventor	Chen, et al.
				Group Art Unit	1734 1763
				Examiner Name	Unknown Zerrigon
				Attorney Docket Number	AMAT/6766/CPI/LB/PJS
				Submission Date	September 29, 2004
Sheet	4	of	4		

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Examiner

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Sheet 1 of 7 sheets

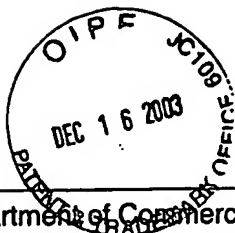
U.S. Department of Commerce, Patent and Trademark Office (PTO Form 1449 modified)		Docket No. APPM/6766	Serial No. 10/712,690
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Applicant Chen, et al.	Confirmation No.
(Use several sheets if necessary)		Filing Date November 13, 2003	Group 1763
Examiner <i>Unknown Zervigon</i>			

U.S. Patent Documents

*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
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	A2	6,511,539	01/28/2003	RAAIJMAKERS	117	102	09/08/1999
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<i>[Signature]</i>	A27	6,207,487	03/27/2001	KIM, ET AL.	438	238	10/12/1999

Examiner *[Signature]* Date Considered *8/8/05*

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Applicant Chen, et al.	Confirmation No.
(Use several sheets if necessary)		Filing Date November 13, 2003	Group 1763
Examiner Unknown <i>Zervigon</i>			

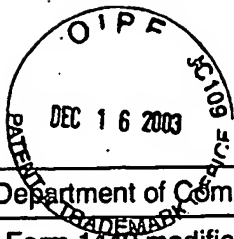
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*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
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Examiner *Michael Zervigon*

Date Considered *8/8/95*

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Examiner Unknown <i>Zervigon</i>			

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	A2	5,374,570	12/20/1994	NASU, ET AL.	437	40	08/19/1993
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	A6	4,993,357	02/19/1991	SCHOLZ	118	715	12/21/1989
	A7	4,834,831	05/30/1989	NISHIZAWA, ET AL.	156	611	09/04/1987
	A8	4,413,022	11/1/1983	SUNTOLA, ET AL.	427	255.2	06/21/1979
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	A16	20030042630	03/06/2003	BABCOKE, ET AL.	261	121.1	09/05/2001
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	A23	20020177282	11/28/2002	SONG	438	300	12/18/2001
	A24	20020164423	11/07/2002	CHIANG, ET AL.	427	255.28	05/03/2002
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Examiner *[Signature]* Date Considered *2/8/05*

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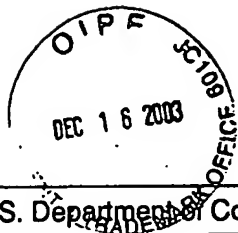
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Applicant Chen, et al.	Confirmation No.
(Use several sheets if necessary)		Filing Date November 13, 2003	Group 1763
Examiner Unknown <i>Zerrignon</i>			

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*Examiner Initial		Document Number	Issue Date	Applicant(s) Name	Class	Subclass	Filing Date If Appropriate
<i>TR</i>	A1	20020146511	10/10/2002	CHIANG, ET AL.	427	248.1	10/24/2001
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	A16	20020073924	06/20/2002	CHIANG, ET AL.	118	723 R	10/24/2001
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Examiner <i>M. A. Zerrignon</i>	Date Considered <i>8/8/5</i>
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Applicant Chen, et al.	Confirmation No.
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Examiner Unknown <i>Zerigun</i>			

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Examiner *Zerigun*

Date Considered *8/8/05*

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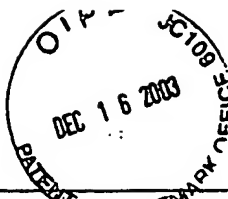
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Examiner Unknown <i>Ferrigon</i>			

F reign Patent Documents

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Examiner *Rock Lenz* Date Considered *8/8/5*

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT					Applicant Chen, et al.		Confirmation No.	
(Use several sheets if necessary)					Filing Date November 13, 2003		Group A63	
Examiner Unknown <i>Zerrigon</i>								
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OTHER ART								
*Examiner Initial		Including Author, Title, Date, Pertinent Pages, Etc.						
<i>RR</i>	C1	Kukli, <i>et al.</i> , "Tailoring the Dielectric Properties of $\text{HfO}_2\text{-Ta}_2\text{-O}_5$ Nanolaminates," Applied Physics Letters, Vol. 68, No. 26, June 24, 1996; p. 3737-9						
	C2	Kukli, <i>et al.</i> , "Atomic Layer Epitaxy Growth of Tantalum Oxide Thin Films from $\text{Ta}(\text{OC}_2\text{H}_5)_5$ and H_2O ," Journal of the Electrochemical Society, Vol. 142, No. 5, May 1995; p. 1670-5						
	C3	Kukli, <i>et al.</i> , "In situ Study of Atomic Layer Epitaxy Growth of Tantalum Oxide Thin Films From $\text{Ta}(\text{OC}_2\text{H}_5)_5$ and H_2O ," Applied Surface Science, Vol. 112, March 1997, p. 236-42						
	C4	Kukli, <i>et al.</i> , "Properties of Ta_2O_5 -Based Dielectric Nanolaminates Deposited by Atomic Layer Epitaxy," Journal of the Electrochemical Society, Vol. 144, No. 1, Jan. 1997; p. 300-6						
	C5	Kukli, <i>et al.</i> , "Properties of $\{\text{Nb}_{1-x}\text{Ta}_x\}_2\text{O}_5$ Solid Solutions and $\{\text{Nb}_{1-x}\text{Ta}_x\}_2\text{O}_5\text{-ZrO}_2$ Nanolaminates Grown by Atomic Layer Epitaxy," 1997; p. 785-93						
	C6	Ritala, M., <i>et al.</i> , "Chemical Vapor Deposition," January 1999, p. 6-9.						
	C7	Rossnagel, <i>et al.</i> , "Plasma-enhanced Atomic Layer Deposition of Ta and Ti for Interconnect Diffusion Barriers," J. Vac. Sci. Technol. B., Vol. 18, No. 4 (July 2000); p2016-20						
	C8	Niinisto, <i>et al.</i> , "Synthesis of Oxide Thin Films and Overlayers by Atomic Layer Epitaxy for Advanced Applications," Materials Science and Engineering B41 (1996) 23-29						
	C9	Eisenbraun, <i>et al.</i> , "Atomic Layer Deposition (ALD) of Tantalum-based materials for zero thickness copper barrier applications," Proceedings of the IEEE 2001 International Interconnect Technology Conference (Cat. No. 01EX461) 2001						
<i>✓</i>	C10	Clark-Phelps, <i>et al.</i> , "Engineered Tantalum Aluminate and Hafnium Aluminate ALD Films for Ultrathin Dielectric Films with Improved Electrical and Thermal Properties," Mat. Res. Soc. Symp. Proc. Vol. 670 (2001)						
Examiner <i>RR</i>					Date Considered <i>8/8/05</i>			
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